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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	:	**Confirmation No. 1004**
Kenji OSHIMA	:	Docket No. 2001-1135A
Serial No. 09/935,661	:	Group Art Unit 1714
Filed August 24, 2001	:	Examiner Callie E. Shosho
ELECTROSTATIC INK JET INK AND METHOD OF CONTROLLING ELECTROSTATIC CHARGES OF COLOR MATERIAL IN THE INK	:	THE COMMISSIONER IS AUTHORIZED TO CHARGE ANY DEFICIENCY IN THE FEE FOR THIS PAPER TO DEPOSIT ACCOUNT NO. 23-0975.

RESPONSE AFTER FINAL REJECTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE UNDER 37. CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 1714

Sir:

Responsive to the Office Action of March 8, 2004, Applicant submits the following remarks in support of the patentability of the presently claimed invention over the disclosure of the reference relied upon by the Examiner in rejecting the claims. Further and favorable reconsideration is respectfully requested in view of these remarks.

Thus, the rejection of claims 1 and 3-8 under 35 U.S.C. §102(b) as being anticipated by Baker et al. taken in view of the evidence in Ueda et al. is respectfully traversed.

In addition to Applicant's previous patentability arguments, Applicant points out that the process of the Baker et al. reference comprises:

(a) forming a dispersion of a gel organosol in a carrier liquid;

(b) adding at least one colorant;

(c) phase separating a portion of the liquid from the dispersion; and

(d) removing the liquid to form a concentrated colored dispersion.

Thus, the obtained colorant dispersion includes the following three components:

(a) a core covalently bonded (which means chemically bonded) with steric stabilizer, wherein the stabilizer forms a rigid gel structure in the liquid;

(b) a colorant; and

(c) small amount of liquid.

On the contrary, the colorant dispersion in the present invention as claimed comprises:

(a) a dispersant (comprising aliphatic hydrocarbon);

(b) a colorant that is not soluble in the dispersant;

(c) a high polymer having specific repeating units and being "soluble" in the dispersant; and

(d) a metal salt of a fatty acid having between 6 and 12 carbon atoms.

The ink composition of the present invention is thus clearly different from the composition of Baker et al. since, whereas the Baker et al. composition includes a gel structure as a result of phase separation, there is no such gel structure in the dispersion of the present invention because phase separation does not occur.

The contrast between the present invention and Baker et al. is also apparent from the difference in technical philosophy of the invention and reference. That is, Baker et al. aims to avoid the precipitation of the colorant in the liquid by forming "a three dimensional gel of controlled rigidity" (Abstract), which means to support the colorant by formation of a three dimensional gel in the liquid. An analogy would be a sliced piece of fruit "floating" in a jelly, which is the type of effect that Baker et al. expect.

In the present invention, a colorant is supported in a pure "liquid" by an electrical mutual propulsion force of the colorant, and the force for the propulsion is derived from the combination of the soluble polymer and the metal salt.

It is therefore apparent that there is a fundamental difference in philosophy between the present invention and the Baker et al. reference.

The Examiner should also note the obvious distinction between the technical terms, "dispersion" and "solution".

The Examiner takes the position (page 3 of the Office Action) that the graft stabilizer of Baker et al. includes repeating units of alkyl (meth)acrylate as presently claimed, and that the reference discloses that the graft stabilizer is soluble or marginally insoluble in the aliphatic hydrocarbon solvent. The Examiner further argues that while the core portion of the organosol is insoluble, the graft stabilizer portion of the organosol is soluble in the aliphatic hydrocarbon solvent, and therefore it is clear that the polymer, i.e. organosol, of Baker et al. is at least partially soluble in the aliphatic hydrocarbon solvent due to the presence of the graft stabilizer.

Similarly, the Examiner asserts (page 5) that the organosol of Baker et al. is partially soluble in the solvent due to the presence of the graft stabilizer which Baker et al. describes as soluble in the solvent, referring to column 6, lines 44-48 of the reference.

However, although the disclosure at column 6, lines 44-48 of Baker et al. indicates that the organosol is comprised of a soluble or marginally insoluble high molecular weight (co)polymeric steric stabilizer covalently bonded to an insoluble, thermoplastic (co)polymeric core, the subsequent disclosure at column 6, lines 51-55 states that:

> The resulting graft stabilizer remains in a freely flowing, easily handled solution until the graft stabilizer is covalently bonded to the insoluble core, at which point a gel organosol is formed.

Thus, once the solution of the graft stabilizer is covalently bonded to the insoluble core, a gel organosol is formed, which is no longer a solution, but rather, is a dispersion of the copolymer in the dispersant; which is in contrast to the present invention where the polymer is soluble (i.e. forms a solution) in the dispersant. This is confirmed by the preparation examples for the graft stabilizers (column 22), organosols (bottom of column 32), and liquid toners (column 42) of Baker et al. For instance, the disclosure at column 22, lines 35-44 indicates that the graft stabilizer remains in solution, yet forms a gel organosol when covalently bonded to the insoluble core of the organosol in a subsequent polymerization step. The disclosure below the Table in column 35 then sets forth examples of preparation of the organosol based on the copolymer graft stabilizer, and as shown in Example 21, the organosol is a dispersion (column 35, line 66). Referring to Example 37 in column 42, the gel organosol, which as indicated above is a dispersion of the copolymer in the dispersant, is combined with a pigment to produce a liquid toner.

With regard to the Examiner's argument that the graft stabilizer portion of the organosol is soluble in the aliphatic hydrocarbon solvent, Applicants respectfully submit that Baker et al. does not disclose an ink composition containing only a solution of the graft stabilizer. The only ink composition disclosed in the reference is one which contains the organosol, which is insoluble in the solvent because the stabilizer has been covalently bonded or grafted (column 6, line 49) to the insoluble core.

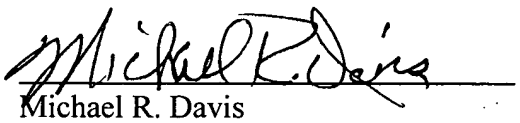
In summary, whereas the polymer, i.e. organosol (column 6, line 45) of Baker et al. forms a dispersion in the dispersant, in the present invention the polymer is soluble in the dispersant, i.e. forms a solution.

For these reasons, Applicant takes the position that the presently claimed invention is clearly patentable over the prior art.

Therefore, in view of the foregoing remarks, it is submitted that the ground of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

Kenji OSHIMA

By: 

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